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NOTES AND LITERATURE

SCHLOSSER ON FAYÛM MAMMALS[1]

A Preliminary Notice of Dr. Schlosser's Studies upon the Collections made in the Oligocene of Egypt for the Stuttgart Museum, by Herr Markgraf.—The most interesting points are the much greater variety of Hyracoidea, including both bunodont and bunoselenodont types, and the presence of true Primates, which the author refers quite positively to the Anthropoidea. The fauna is also shown to include Chiroptera and Insectivora, the one order represented by the humerus of a large vampyroid bat, *Vampyravus,* the other by a lower jaw, *Metoldobotes,* compared with the somewhat problematical Proglires.

The Primates are represented by three lower jaws, *Mœripithecus, Parapithecus* and *Propliopithecus,* the two latter sufficiently complete to indicate the dentition, which is typically primate, although in the reviewer's opinion the material is not adequate to prove their reference to the Anthropoidea, still less to assert that the last genus is "not only the ancestor of all the Simiidæ, but probably also of the Hominidæ." If the author had stated that the Oligocene ancestor of man probably had lower teeth like those of *Propliopithecus,* the conclusion might well be accepted. But the corollary of Schlosser's statement is that we have found the Oligocene ancestor of man and that he lived in Africa. The evidence is not adequate to warrant any such conclusions. Dr. Schlosser has perhaps no intention of drawing them. But others will promptly do so, and add a little more to the top-heavy and ill-balanced superstructure of speculation and hypothesis which obscures the little that we really do *know* about the ancestry of man and, to a less extent, what we know of the ancestry of most other animals.

The Hyracoidea are discussed at some length. Besides the more typical Saghatheriidæ of Andrews, with bunoselenodont teeth, Schlosser refers to here as a distinct subfamily, the problematical *Geniohyus* of Andrews and defines three new genera, *Pachyhyrax, Mixohyrax* and *Bunohyrax,* intermediate between the two extremes. Six new species are named, but without hint of description. As the paper is avowedly published in order to secure priority for the results of Dr. Schlosser's studies over the concurrent investigations of other authors, it is unfortunate that other authors, however well disposed, can not accept his species as of this date, without violating the rules of nomenclature.

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[1] Über einige fossile Säugethiere aus dem Oligocän von Agypten," von Max Schlosser, München, *Zoologischen Anzeiger,* Bd. XXXV., Nr. 15, vom 1 Marz, 1910.

Of more importance than questions of priority is Dr. Schlosser's estimate of the affinities of these Fayûm Hyracoids. They differ widely from modern Hyraces in the general form and proportions of the skull (and are singularly like pigs and anthracotheres—W. D. M.) but agree very nearly in the basicranial foramina and jaw articulation, as also in the general construction of carpus and tarsus; the feet are, however, more specialized (as might be expected in view of the larger size of the animals). They are not directly ancestral to the modern Hyracidæ, but *Pliohyrax* of the Pliocene of Samos is apparently descended from *Saghatherium*.

The author regards the Hyracoidea as having no near relations with any other order except the Condylarthra, and as in certain important features cited they are more primitive than any known Condylarth, the relationship can not be very close even here. He disbelieves in the affinity to *Arsinoitherium* suggested by Andrews, holding that this genus is related to the Amblypoda. Any relationship of the Hyracoidea to the Proboscidea through *Mœritherium* must be limited to a common derivation from Condylarth ancestry. He agrees with Sinclair that the Hyracoids have no real affinity with the South American Toxodonts and Typotheres (which, however, can equally well be derived from Condylarth ancestry—W. D. M.) and protests strongly against the names given by Ameghino to several South American genera indicating Hyracoid affinities which Dr. Schlosser regards as a baseless hypothesis. (But to name a genus in indication of its supposed affinities, often subsequently proved erroneous, is so common a procedure, that it is hardly fair to condemn the Argentine paleontologist for following it. The eight new genera named in this paper are every one of them designated in accord with the author's hypothesis as to their relationship, and several of them at least may turn out to be seriously misleading.—W. D. M.)

Among the Carnivora, two new species of *Apterodon* are mentioned, one of which is adequately described, and the problematic genus *Ptolemaia* Osborn is discussed and considered as a highly specialized offshoot of *Cynohyænodon*. (The teeth of this genus are very peculiar, however, and are more suggestive of

Insectivore or even Tæniodont affinities than of Hyænodont derivation. They certainly can not be derived from those of *Cynohyænodon*.—W. D. M.)

A united scapholunar bone is considered to represent a gigantic undescribed Creodont "vielleicht eine *Palæonictis* oder eine *Pachyæna*." (It does not appear, however, why Dr. Schlosser should suggest the presence of these genera. In *Pachyæna* the scaphoid and lunar were certainly separate, nor is there any evidence nor probability that they were united in *Palæonictis;* both genera are of Lower Eocene age, and belong to families of Creodonta of which no trace has been found in the Fayûm fauna or in the Oligocene epoch, and in which the scaphoid and lunar were never united, so far as we know; on the other hand, we know that the Hyænodonts were represented by several genera in the Fayûm and are the only Carnivora positively known in this fauna; they are the only family of Creodonts known to survive into the Oligocene, and in *Hyænodon,* at least, the scaphoid and lunar were sometimes united. The probabilities, therefore, are greatly in favor of this scapholunar representing a large Hyænodont.—W. D. M.)

The presence of Chiroptera in the fauna is an interesting positive addition. The same degree of certainty does not attach to the Insectivora, since the Proglires with which *Metoldobotes* is compared are a group of somewhat doubtful boundaries and affinities. If the Fayûm genus is really related to *Olbodotes* Osborn ("*Oldobotes,*" Schlosser) it is a point of some interest. *Olbodotes* and the almost identical *Mixodectes* form a characteristic group of the Basal Eocene fauna of North America. As Osborn has repeatedly insisted, this fauna was not the source of the later Eocene faunæ in North America, except for a few groups like the Phenacodonts, Coryphodonts and Uintatheres, which gradually disappeared through the course of the Eocene. There is strong support for the hypothesis that it *was* the source of the early Tertiary faunæ of South America which developed in isolation along lines partly parallel with the development of the great Holarctic fauna. The autochthonic element of the early Tertiary fauna of Africa may be derived in a corresponding manner, except that the isolation was not so prolonged or else not so complete. The Cernaysian and Puerco-Torrejon faunæ as known appear to be parts of the same regional fauna, the Paleocene Holarctic. The derivation of Hyracoids, Arsinoitheres, Proboscidea, etc., from this fauna is conjectural because we have no intermediate stages. But the discovery of less progressive and specialized descendants of Paleocene Holarctic animals in the African Oligocene would lend support to this conjecture. Unfortunately, *Metoldobotes* is referable to a group of disputed affinities in which the dentition is a treacherous and uncertain guide, the reviewer feels obliged to accept the reference with reserve; but it is well to point out its significance if confirmed.

The rodent genera described by Osborn are regarded by Schlosser as obviously related to *Theridomys* and *Trechomys* of the European Eocene and Oligocene, the relationship being confirmed by the discovery of an upper jaw. (Osborn compared the originals with specimens of these and other European genera, mostly identified by Dr. Schlosser, expecting to find the affinities close; but the most that the evidence warrants is that they probably belong to the same family. There are genera of several other families of rodents which approach the Theridomyid pattern and dentition as closely as do *Phiomys* and *Metaphiomys* of the Fayûm.)

The foregoing review may appear perhaps unduly critical. But there is an increasing tendency in scientific work towards an uncritical acceptance of the views and conclusions set forth in the work of special research. It becomes peculiarly incumbent, therefore, on those who are engaged in such work to avoid overpositive statements or conclusions based upon inadequate evidence.

Conservative statement and open-mindedness are essential to the permanence of scientific theory. And from Dr. Schlosser, who is justly regarded as one of the greatest living authorities upon Tertiary mammals, we may fairly demand an exceptional degree of conservatism.

W. D. MATTHEW.

AMERICAN MUSEUM OF NATURAL HISTORY.

THE OPHIDIAN GENUS GRAYIA

Dr. C. B. Davenport,[1] writing on the imperfection of dominance, has recently remarked that "the weakened character may be retarded in development so that it fails to appear at the normal period but develops later. Thus Lang found hybrids between red and non-red snails to be at first non-red but finally red.[2] Some authors have spoken of this as *reversal of domi-*

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[1] *American Breeders' Magazine*, Vol. 1, p. 40.

[2] *Helix nemoralis* var. *libellulo-rubella;* cf. Taylor, "Monog. L. & F. W. Moll. British Is.," part 17, p. 304.